REMARKS

Claims 1-24 are pending in this application. By this response, claims 1, 8, 15 and 24 are amended. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

The Office Action rejects claims 1, 2, 6-9, 13-16 and 20-24 under 35 U.S.C. §103(a) as being unpatentable over Tuceryan, et al. (USP 6,044,168) and Holliman, et al. (USP 6,075,557) and claims 3-5, 10-12 and 17-19 under 35 U.S.C. §103(a) as being unpatentable over Tuceryan, et al. and Holliman, et al. in view of Lee and Ranganath ("3D Deformable Face Model for Pose Determination and Face Synthesis", Department of Electrical Engineering, The National University of Singapore, Image Analysis and Processing, International Conference Sept. 1999). These rejections are respectfully traversed.

Claim 1 recites, *inter alia,* a method of extracting a face area from an image including a human face, comprising: displaying the image and a predetermined face template; carrying out position matching between the face template and the face area to be extracted, by moving, transforming and/or rotating the face template and/or the image according to an input from input means by a user; and extracting the face area based on a result of position matching.

Claim 8 recites, *inter alia,* a face extraction apparatus for extracting a face area from an image including a human face, comprising: a display means, input means, position matching means for carrying out position matching between the

face templates and the face area to be extracted, by moving, transforming and/or rotating the face template and/or the image according to the input from the input means by a user, and an extraction means.

Claim 15 recites, *inter alia,* a computer readable recording medium storing a program to cause a computer to execute a method of extracting a face area form an image including a human face, comprising: displaying the image and a predetermined face template; carrying out position matching between the face template and the face area to be extracted, by moving, transforming and/or rotating the face template and/or the image according to an input from input means by a user; and extracting the face area based on a result of position matching.

Claim 24 recites, *inter alia,* a computer readable recording medium storing a program to cause a computer to execute a method of extracting a face area form an image including a human face, comprising: displaying the image and a predetermined face template; carrying out position matching between the face template and the face area to be extracted, by moving, transforming and/or rotating the face template and/or the image according to an input from input means by a user; and extracting the face area based on a result of position matching; and converting a color tone of a desired area including the face area to a color tone of a predetermined target image.

Each of the above independent claims recite a face template created in an extracted image of a human face. Position matching of the face and the face template is accomplished by moving, transforming and/or rotating the face image and/or face template as instructed by an input of a user. The ability for a user to perform the position matching allows for a precise extraction of the facial characteristics in creation of the facial template.

In contrast, Tuceryan provides a system that automatically analyzes an input image to determine facial characteristics. The system uses facial templates stored in a database in its system. Each facial feature is detected in the image and then processed to create a 3D facial module. Templates of the facial features are created and then used to refine the location of the facial features. Each step of the process of Tuceryan is accomplished using a program which automatically performs the process. See column 3, line 8 through column 5, line 12.

Nowhere does Tuceryan teach or suggest performing rotation of a facial template or image. Further, Tuceryan fails to teach or suggest matching the face template and image by rotating, moving and/or transforming the face template and/or image based on an input from an input means by a user, as recited in claims 1, 8, 15 and 24.

Also, Holliman does not make up for the deficiencies of Tuceryan. Holliman teaches a image tracking system. The system determines a position of a target in a series of images. In aspects of Holliman's system, a template is overlaid on a target

image by a processor. See column 11, lines 40-47. A user is then is able to observe the accuracy of the template overlay on the image.

Holliman, however, fails to teach or suggest the moving, transforming and/or rotating the face template and/or image according to an input from an input means by a user, as recited in claims 1, 8, 15 and 24. As discussed above, in Holliman, it is the processor that overlays the image. The user may align the image afterwards, but the user cannot rotate, transform or move a face template or image during the position matching process. At best, it can be said that Holliman teaches only the ability to move a graphical guide, not the image and certainly not the rotation or transformation of the image or face template.

Further, one of ordinary skill in the art would not be motivated to combine the teachings of Tuceryan with Holliman to achieve Applicant's claimed invention. Tuceryan's system is designed to operate without user intervention. Holliman's system, on the other hand, is designed so a user can make an alignment change. One of ordinary skill would not modify Tuceryan's automated system to include intervention by a user, as it would eliminate the advantages of providing such an automated system.

The Office Action alleges that motivation to combine the teachings because "the teaching of displaying two images together is a good method of checking/verifying that the template match being performed on the images is being done correctly and the one with the best correlation is obtained and any

changes that need to be performed on the system can be performed or another match performed if needed." See page 3, 2nd paragraph. The argument against modifying Tuceryan's teachings with Holliman revolves around whether a wholly automated system as taught by Tuceryan would include an operation, such as an overlaying operation that requires a users input, as taught by Holliman, not whether displaying of two images together is a good method of checking/verifying, as suggested in the Office Action. Applicant respectfully submits that Tuceryan's system is designed so that user input is unnecessary, the system automatically performs all necessary operations. Thus, one would not combine a fully automated system as taught by Tuceryan with a system that requires a user input, as taught by Holliman, thus destroying the full automation functionality of the system.

Thus, as demonstrated above, the combination of Tuceryan and Holliman fail to teach each and every claimed feature as recited in the independent claims 1, 8, 15 and 24. Also, motivation to combine the teachings has not been established. Therefore, the requirements for establishing a rejection under 37 U.S.C. §103 have not been met.

Further, regarding claims 22-24, these claims recite, "converting a color tone of a desired area including the face area to a color tone of a predetermined target image". The Office Action alleges that it would have been obvious to convert the black and white templates of Tuceryan to provide the conversion of color tone

of a desired area of the color tone of a predetermined target area. Although it may be obvious to use a different color than a black background and white lines as illustrated in Figs. 4 and 5 of Tuceryan, it is not obvious to convert a desired area to a color tone of a predetermined target image. Nowhere in Tuceryan does it teach or suggest using the templates to define a target area where the target area is then converted to a color tone based on the target image. There must be some suggestion within Tuceryan or by one of ordinary skill to modify Tuceryan's teachings to achieve the above claimed feature. Simply put Tuceryan does not teach or suggest the above-noted claimed feature and one of ordinary skill would not look to the black and white wire frame images of Figs. 4 and 5 and suggest converting desired areas to color tones of a target image.

Also, Applicants respectfully submit that with regard to claims 3, 10 and 17, Lee only discloses transformation of the image and does not disclose transformation of an image to generate an unsharp image, as recited in the claims. The Office Action asserts that the deformation during model matching of the model represent the unsharp image. Applicant, however, suggest that the deformation is made to "determine visible edges" (see in Lee #3 "Model Matching and Pose Determination") which would be a sharpening of the image, not an unsharpening of the image. Thus, the Office Action's allegation does not correspond to the teachings of the reference.

Finally, the Office Action states that it is obvious to one of ordinary skill that the color that is different from the skin color is a "complimentary color" of the skin color as recited in claims 7, 14 and 21. However, Applicant respectfully submits that none of the cited references disclose the feature of the colors, different from the skin color being complimentary colors to the skin color. Applicant respectfully submits that one of ordinary skill would not make this determination, as there is not teaching to indicate that such feature as taught by Applicant is a complimentary color of the skin color.

In view of the above, Applicant respectfully submits that claims 1, 8, 15 and 24 are patentable over these cited references. Further, claims 3, 7, 10, 14, 17 and 21-24 are also patentable for the reasons provided in regard to independent claims 1, 8, 15 and 24 and also for the further features, which they provide as discussed above. Also, claims 2, 4-6, 9, 11-13, 16 and 18-20 are also distinguishable over cited references for the reasons indicated above. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections.

Conclusion

For at least these reasons, it is respectfully submitted that claims 1-24 are distinguishable over the cited references. Favorable consideration and allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings (Reg. No. 48,917) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of $110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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